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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/812,429	03/30/2004	Michael A. Faulkner	EMC-04-008	3352

24227 7590 10/18/2006

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EXAMINER	
BAUER, SCOTT ALLEN	

ART UNIT	PAPER NUMBER
2836	

DATE MAILED: 10/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/812,429	FAULKNER ET AL.	
	Examiner	Art Unit	
	Scott Bauer	2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 July 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *1-5,7-10,12-17 and 19-23* is/are rejected.

7)☒ Claim(s) *6,11 and 18* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-5, 7-10, 12-17 & 19-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maxim (Maxim Data Sheet 19-2735; Rev 0; 1/03) in view of Suessmilch (US 3,886,932).

3. With regard to Claims 1 & 13, Maxim, in figure 3, discloses a power supply system comprising: a power supply (Silver Box or Rectifiers); a load (output bus) coupled to the power supply via a power supply line to receive a voltage therefrom; a circuit protection device comprising: at least one switch device (Q1 & Q2) coupled between the power supply and the load on the power supply line; a first controller (MAX8536) coupled to the at least one switch for: monitoring current flow through the at least one switch; maintaining the at least one switch in an ON state while current flows through the at least one switch in a first direction; and causing the at least one switch to toggle to an OFF state if current flowing through the at least one switch (Q1) flows in a second direction (page 1). Maxim further teaches that a timer input can be used as a logic enable pin by driving the gate of a FET, and thus grounding the timer input pin.

Maxim does not teach a second controller coupled to the power supply line between the power supply and the at least one switch and coupled to the at least one switch for sensing an amount of current flowing between the power supply and the at least one switch and causing the at least one switch to toggle to the OFF state when the current sensed by the second controller exceeds a reference value.

Suessmilch, in Figure 1, teaches an over current protection circuit comprising a controller coupled to a power supply line between a power supply (1) and an at least one switch (3) and coupled to an at least one switch for sensing an amount of current flowing between the power supply and the at least one switch and causing the at least one switch to toggle to the OFF state when the current sensed by the second controller exceeds a reference value (column 2 lines 1-18).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Maxim with Suessmilch, by incorporating the overcurrent protection device of Suessmilch into the circuit of Maxim by driving the FET of Maxim with the output of the circuit of Suessmilch, for the purpose of providing the Maxim device with an overcurrent protection.

4. With regard to Claims 2 & 14, Maxim in view of Suessmilch discloses the power supply system of Claims 1 &13. Maxim further discloses that the at least one switch comprises a pair of MOSFETs (Q1 & Q2).

With regard to Claims 3 & 15, Maxim in view of Suessmilch discloses the power supply system of Claims 2 & 14. Maxim further discloses that the first controller comprises a first input (UVP) coupled to the power supply line between the pair of MOSFETs and the power supply, a second input (OVP) coupled to the power supply line between the pair of MOSFETs and the load, and an output (GATE) coupled to gate terminals of the pair of MOSFETs, wherein, when the output is in a first state, the pair of MOSFETs is in the ON state and when the output is in a second state, the pair of MOSFETs is in the OFF state.

5. With regard to Claims 4 & 16, Maxim in view of Suessmilch discloses the power supply system of Claims 3 & 15. Suessmilch further discloses that the second controller comprises a current sensing device (5) coupled to the power supply line between the power supply (1) and a switch (3) for sensing the current in the power supply line and outputting a sensed voltage corresponding to the sensed current, a comparing device (6) for comparing the sensed voltage to a reference voltage and outputting a first output when the sensed voltage exceeds the reference voltage. Maxim further teaches a switch (FET coupled to the timer) coupled between the comparing device and the gate terminals of the pair of MOSFETs. In the device of Maxim in view of Suessmilch, the switch, upon receiving the first output of the comparing device (as enable), operates to toggle the pair of MOSFETs to the OFF state.

6. With regard to Claims 5 & 17, Maxim in view of Suessmilch discloses the power supply system of Claims 4 & 16. Maxim further discloses that the first controller comprises a timer device and, upon receiving the first output from the comparing device of Suessmilch, the second controller switch (Timer FET) operates to disable the timer, thus driving the output of the first controller from the first state to the second state, causing the pair of MOSFETs to toggle to the OFF state.

7. With regard to Claims 7 & 19, Maxim in view of Suessmilch discloses the power supply system of Claims 4 & 16. Suessmilch further discloses that , upon receiving the first output from the comparing device, the second controller switch operates to pull the control terminals from the first state to the second state, causing the pair of MOSFETs to toggle to the OFF state (column4 lines 23-37).

8. With regard to Claims 8 & 20, Maxim in view of Suessmilch discloses the power supply system of Claims 1 & 13. Maxim further discloses that the first controller comprises a first input (UVP) coupled to the power supply line between the at least one switch and the power supply, a second input (OVP) coupled to the power supply between the at least one switch and the load, and an output (GATE) coupled to a control terminal of the at least one switch, wherein, when the output is in a first state, the at least one switch is in the ON state and when the output is in a second state, the at least one switch is in the OFF state.

9. With regard to Claims 9 & 21, Maxim in view of Suessmilch discloses the power supply system of Claims 8 & 20. Suessmilch further discloses that the second controller comprises a current sensing device coupled to the power supply line between the power supply and the at least one switch for sensing the current in the power supply line and outputting a sensed voltage corresponding to the sensed current, a comparing device for comparing the sensed voltage to a reference voltage and outputting a first output when the sensed voltage exceeds the reference voltage. Maxim further teaches a switch (TIMER FET) coupled between the comparing device of Suessmilch and the gate terminals of the at least one switch, wherein the switch, upon receiving the first output of the comparing device, operates to toggle the at least one switch to the OFF state.

10. With regard to Claim 10, Maxim in view of Suessmilch discloses the power supply system of Claim 9. Maxim further discloses that the first controller comprises a timer device and, upon the first output from the comparing device of Suessmilch, the controller switch (Timer FET) operates to disable the timer device, thus driving the output of the first controller from the first state to the second state, causing the at least one switch to toggle to the OFF state.

11. With regard to Claim 12, Maxim in view of Suessmilch discloses the power supply system of Claim 9. Suessmilch further discloses that upon receiving the first output from the comparing device, the second controller switch operates to pull the

control terminals from the first state to the second state, causing the at least one switch to toggle to the OFF state (column4 lines 23-37).

12. With regard to Claims 22 & 23, Maxim teaches a a fault protection system and method of providing fault protection in a power supply system, the system and method comprising: monitoring a current flowing from a power supply to a load via a power supply line; toggling a switch device coupled between the power supply and the load in the power supply line from an ON state to an OFF state when the current begins to flow from the load to the power supply.

Maxim does not teach monitoring the amplitude of the current flowing in the power supply line; and toggling the switch device from the ON state to the OFF state when the amplitude of the current in the power supply line exceeds a reference value..

Suessmilch, teaches monitoring the amplitude of the current flowing in the power supply line; and toggling a switch device from the ON state to the OFF state when the amplitude of the current in the power supply line exceeds a reference value.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Maxim with Suessmilch as described above.

Allowable Subject Matter

13. Claims 6, 11 & 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

14. Claims 6, 11 & 18 would be allowable if rewritten in independent form including all of the limitations of the base claim because the prior art of record does not teach or fairly suggest a power supply system of Claim 4 comprising an under voltage protection device wherein a second controller switch operates to enable the under voltage protection device, thus driving the output of the first controller from the first state to the second state.

Maxim, in the Figure "UVP FAULT WAVEFORM"", teaches that the gate output switches from a first state to a second state, when the under-voltage protection input drops below a certain voltage level. However, the prior art of record does not teach that the pin can be driven low with a switch when the current sensed by the second controller exceeds a reference value.

Response to Arguments

15. Applicant's arguments with respect to claims 1-5, 7-10, 12-17 & 19-23 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott Bauer whose telephone number is 571-272-5986. The examiner can normally be reached on M-F 9am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on 571-272-2058. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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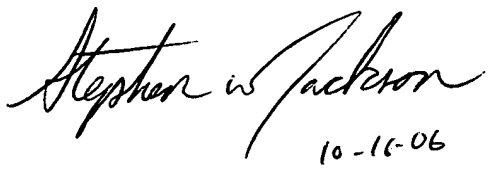

STEPHEN W. JACKSON
PRIMARY EXAMINER